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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/540,850

06/27/2005

Alexander Hofmann

HOFMANN10

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BROWDY AND NEIMARK, P.L.L.C.
624 NINTH STREET, NW
SUITE 300
WASHINGTON, DC 20001-5303

EXAMINER

MCNALLY, DANIEL

ART UNIT

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1791

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,850	Applicant(s) HOFMANN ET AL.	
	Examiner DANIEL MCNALLY	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17, 19, 20 and 22-33 is/are pending in the application.
- 4a) Of the above claim(s) 25-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17, 19, 20 and 22-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 17, 19, 20 and 22-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 17 is it not clear if the laser welding beam is transmitted though the laser transmissive join partner to expose the laser absorptive join partner to radiation, or if the laser is merely exposed onto both of the join partners. It appears the applicant wants to claim a so-called transmissive welding step, therefore it is recommended in lines 12-13 replacing "transmitting the laser to the laser transmissive join partner" with --transmitting the laser through the laser transmissive join partner--.

In claim 17 it is not clear how exposing the "laser absorptive" join partner to secondary radiation will homogenize the temperature field in the weld area. It appears the applicant wants to claim using the secondary radiation to heat the "laser transmissive" join partner, since the absorptive join partner is already exposed to the first radiation. It is recommended in line 15 replacing "laser absorptive join partner" with --laser transmissive join partner--.

Claims 19, 20 and 22-24 depend from claim 17 and require all of the limitations of claim 17. Therefore claims 19, 20 and 22-24 are rejected for the same reasons

expressed above. Resolving the issues in Claim 17 would also remedy the rejection of claims 19, 20 and 22-24.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 17, 19, 20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. [US2003/0213552] (newly cited) in view of Holmes et al. [US6451152] (of record, previously cited).

Chen discloses a method of transmissive welding. Chen discloses the well known method of laser welding two polymeric materials comprising providing a laser transparent material, providing a laser absorptive material, contacting the transparent and the absorptive materials, exposing a laser beam through the transparent material onto the absorptive material, wherein the absorption of the laser by the absorptive material heats the contact area between the two materials, the contact areas are heated under pressure and melt, the laser is moved over a contour to form a weld at the exposed areas (paragraph 0002). Chen discloses additional energy for welding can be provided by a secondary radiation source (paragraph 0010, Figure 2). Chen also discloses the materials are guided through rollers that press the material together, and the laser beam is brought into the irradiation zone by a first roller that is transparent to the laser beam (paragraph 0012, Figure 3). Chen discloses using multiple radiation

sources but is silent as to the secondary source providing radiation that deviates from the wavelength of the laser from the first radiation source.

Holmes discloses a method of welding using radiant energy. The method comprises providing a tape and a substrate, contacting the tape and the substrate, pressing the tape and substrate together, using radiant energy from laser diodes to heat the tape and the substrate and forming a weld between the tape and substrate. Holmes discloses providing control over the heating of the tape and the heating of the substrate by controlling the intensity of the energy emitted by the laser diodes to deliver different amounts of energy to the tape relative to the substrate (column 3, lines 21-28). Holmes discloses different rates of heating of the tape and substrate can be achieved by applying laser light of a different wavelength from the diode groups, dependent upon the absorption capabilities of the tape and substrate. Laser diodes provide a laser of a first wavelength to the substrate to heat the substrate and other laser diodes provide a laser of a different wavelength to the tape to heat the tape (column 4, lines 20-37, and abstract).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Chen by using radiant energy of different wavelengths as taught by Holmes in order to efficiently heat both of the welding materials. One of ordinary skill in the art in view of Holmes would have readily appreciated that different wavelengths of radiation are used and optimized based upon the absorption capabilities of the material being exposed to the radiation.

With regard to claims 19 and 20, Chen discloses it is well known to use IR radiation sources, and Holmes discloses energy of different wavelengths is used to heat the different materials, and the wavelength of the radiation impacts the materials rate of energy absorption. One of ordinary skill in the art at the time of invention would have readily appreciated optimizing rate of energy absorption of one of the materials by selecting a preferred energy wavelength.

With regard to claim 22, Chen discloses the secondary radiation source is lead behind the laser welding beam.

With regard to claim 23, Chen discloses the secondary radiation source focuses the energy to a point.

With regard to claim 24, Chen discloses the radiant energy is passed through a transparent pressing roller that is used to press the welding materials together.

Response to Arguments

5. Applicant's arguments with respect to claims 17, 19, 20 and 22-24 have been considered but are moot in view of the new ground(s) of rejection. Newly cited Chen discloses a method of transmission welding using multiple radiant energy sources and using a laser transparent roller.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL MCNALLY whose telephone number is (571)272-2685. The examiner can normally be reached on Monday - Friday 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel McNally/
Examiner, Art Unit 1791

/Jeff H. Aftergut/
Primary Examiner, Art Unit 1791

/DPM/
April 22, 2008